

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (currently amended) A method for producing a plastic film with gas-containing bubbles, the method comprising the steps of:

mixing a material into a plastic (5a) to form an extrusion material;

from the extrusion material, extruding a plastic film (5); and

while orientating it, characterized in that before extrusion material is mixed into the plastic (5a) of the plastic film (5) by stretching, feeding a prezzurized gas into the plastic film to form cavitation bubbles are formed in the plastic [[(5)]] film,

the to be stretched due to the influence of the material, after extrusion the plastic film (5) is orientated by stretching, and simultaneously with orientation pressurized gas [[is]] arranged to act on the plastic film (5) so that the gas diffuses in the cavitation bubbles, and thus bubbles (25) containing the gas are formed in the plastic film (5).

2. (currently amended) A method according to claim 1, ~~characterized in that gas is arranged to act on the plastic film (5) at the first orientation stage and thereafter~~ wherein said orientating by stretching step, provides a first orientation in a first direction, and thereafter, the plastic film (5) is subjected to a second orientation which is substantially perpendicular to the first orientation so that the bubbles (25) containing gas expand due to the influence of the second orientation and the gas.

3. (currently amended) A method according to claim 2, characterized in that at the first orientation [[stage]] the plastic film (5) is orientated in [[the]] a machine direction and at the second orientation [[stage]] the plastic film (5) is orientated in [[the]] a direction substantially transverse to the machine direction.

4. (currently amended) A method according to claim 1, characterized in that [[the]] a pressure of the gas acting on the plastic film (5) is over 3 bars.

5. (currently amended) A method according to claim 1, characterized in that before extrusion, a oily substance or a substance having a melting point lower than [[the]] an orientation temperature of the plastic (5a) is mixed into the plastic (5a).

6. (currently amended) An apparatus for making a plastic film, the apparatus comprising an extruder (1) and at least one orientation device (12, 17) for orientating the extruded film (5), characterized in that the apparatus comprises gas supply means (15, 16) arranged in at least one orientation device (12, 17) for feeding pressurized gas into the plastic film (5) simultaneously with orientation by stretching so that the fed gas diffuses in the cavitation bubbles that are formed in the plastic film (5) during stretching, and thus bubbles (25) containing the fed gas are formed in the plastic film.

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B 7. (original) An apparatus according to claim 6, characterized in that the gas supply means (15, 16) are arranged in the first orientation device (12) and that the apparatus comprises a second orientation device (17) after the first orientation device (12) in the direction of the plastic film (5), the second orientation device (17) being arranged to orientate the plastic film (5) in the direction substantially transverse to the orientation direction of the first orientation device (12) so that the bubbles (25) containing gas expand due to the influence of the second orientation device (17) and the gas.

8. (original) An apparatus according to claim 7, characterized in that the first orientation device (12) is arranged to orientate the plastic film (5) in the machine direction and the second orientation device (17) is arranged to

orientate the plastic film (5) in the direction substantially transverse to the machine direction.

9. (previously presented) An apparatus according to claim 6, characterized in that the gas supply means (15, 16) comprise a discharge chamber (15), in which case at least one orientation device (12, 17) is arranged inside the discharge chamber (15) so that the pressure of the gas in the discharge chamber (15) acts on both sides of the plastic film (5) simultaneously with the orientation effect of the orientation device (12, 17).

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10. (previously presented) An apparatus according to claim 6, characterized in that the extruder (1) comprises a nozzle (6) which is arranged to widen up to the end portion of the extruder (1).

11. (previously presented) An apparatus according to claim 6, characterized in that the apparatus comprises a cross-direction orientation device (17), which comprises two orientation wheels (18) and endless orientation bands (19) which are arranged against the wheels and move around band guide rolls (20), both edges of the plastic film (5) to be orientated being arranged between the orientation wheel (18) and the orientation band (19) and the orientation wheels (18) and the orientation bands (19) being arranged so that in the direction of the plastic film (5) they are further away from one another at the end than

at the beginning, in which case the cross-direction orientation device (17) stretches the plastic film (5) in the cross-direction.

12. (original) An apparatus according to claim 11, characterized in that the apparatus comprises a curved support plate (21), which is arranged between the orientation wheels (18) to support the plastic film (5).

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13. (original) An apparatus according to claim 12, characterized in that the support plate (21) is provided with gaps (21a) and heated gas is arranged to flow through the gaps to heat the sliding surface of the support plate (21) and plastic film (5).

14-17. (canceled)

18. (new) A method for producing a plastic film with gas-containing bubbles, the method comprising the steps of:

mixing a material into a plastic to form an extrusion material;

from the extrusion material, extruding a plastic film;
and

during a first orientation stage of orientating the plastic film by stretching, feeding a pressurized first gas into the plastic film to form cavitation bubbles in the plastic film, the bubbles containing the first gas.

19. (new) The method of claim 18, wherein the material is selected so that the pressurized first gas tears joint surfaces of molecules of the plastic film.

20. (new) The method of claim 18, wherein the material is calcium carbonate particles.

21. (new) The method of claim 21, wherein the first gas is sulphurhexafluride.

22. (new) The method of claim 18, wherein the first gas is air.

23. (new) The method of claim 18, wherein the gas is nitrogen.

24. (new) The method of claim 18, wherein a pressure of the first gas is between 3 and 20 bars.
